

REMARKS

I. Summary

The Office Action mailed August 2, 2010 has been received and reviewed. By way of response, independent claim 1, the only currently pending independent claim, has been amended. Claim 2 has been cancelled and the remaining claims 4-11 have been kept unchanged, although now each depends directly or indirectly from amended claim 1. For reasons stated herein below, it is believed that the claims are now condition for allowance.

II. Additional Background

As will be apparent from discussion in Section III below, where the specific art and comments made by the Examiner are reviewed, there appears to be some miscommunication between the Applicants and the Patent Office, over the intended direction/effect of the claims. In this section, some background regarding the invention is provided, to facilitate.

A. Relationship to Certain Earlier Issued Patents

The present application is a U.S. National Stage application of PCT/US2005/007091, filed March 4, 2005 as an international application of USSN 60/550,505, filed March 5, 2004; USSN 60/621,721, filed October 22, 2004; and, USSN 60/621,426, filed October 22, 2004. A claim of priority to each of these filings has been made, to the extent appropriate.

In the United States, a previously filed application USSN 11/072,094 was filed March 4, 2005 with a claim of priority to each of USSN 60/621,421 and USSN 60/550,505. That US application eventually issued as U.S. 7,238,285 on July 3, 2007. It is noted that a continuation application of USSN 11/072,094, was filed on December 9, 2005 as application 11/275,089. USSN 11/275,089 eventually issued as U.S. 7,160,451.

In general terms, the invention outlined in each of U.S. 7,160,451 and 7,238,285 concerns a liquid filter assembly in which there is positioned in a housing, a combination of an

internally received cartridge and an internally received treatment agent storage and release cartridge, the assembly being configured for a preferred diffusion operation as described in the reference. It is also noted that in U.S. 7,238,285 there is claimed a cartridge assembly adapted to be contained in the housing, the assembly comprising a combination of a filter media construction and a treatment agent storage and release cartridge, also configured for preferred diffusion of treatment agent.

In general, as discussed in Applicant's specification and in the specifications which became U.S. 7,160,451 and 7,238,285, commercial liquid filter assemblies are typically provided in one of two forms: spin-on and bowl/cartridge. With a spin-on arrangement, the filter material is non-removably positioned within a housing, usually contained under a top plate. The entire assembly including the housing is spun onto a filter head, and during servicing the entire assembly including the housing is removed from the filter head, discarded, and is replaced with a new spin-on assembly comprising a housing having filter material therein.

With a bowl/cartridge assembly, during servicing the housing is removed from a filter head, the filter cartridge is removed from the housing, a new filter cartridge is positioned in the housing, and the assembly is repositioned on the filter head. With a bowl/cartridge assembly, then, the housing is not replaced during servicing.

From the above, it will be understood that the present application, is based, in part, on similar inventive concepts and the meeting of similar needs. However, the specific example assembly depicted in the present application, is configured, for "top load" in which a top of the housing (an end remote from a filter head (or base)) is removed, and the cartridge is pulled upwardly out of the housing, while the sidewall of the housing remains attached to a filter or base. This "top load" servicing is shown in the assembly of Fig. 1 is described in the application at page 8, lines 10-13; and, is shown in Figs. 1-3.

The current claims of the present application are directed to a service cartridge, for removable positioning in a housing during use. Thus, the claim is formatted similarly to issued claim 7, of 7,238,285. However, in the instance of claim 1 of the present application, the cartridge is characterized specifically as being appropriate for removable

positioning in a filter housing, whereas the cartridge of claim 7 of 7,238,285 is not so defined.

Present claim 1, then, includes definition of a housing seal arrangement which is appropriate for this removable installation, i.e. it includes a radially inwardly directed seal member positioned for releasable engagement with a stand pipe in a housing, in use. Such a seal arrangement is shown for example in Fig. 1 at 420c and in Fig. 2 at 458/459.

It is noted that the currently claimed cartridge is also required to have a first end cap at a first end of the filter media, which is closed, i.e. which has no aperture therethrough. This corresponds to the end cap depicted in Fig. 2 at 442. Being closed, this end is not inserted into the housing first, and it extends over a stand pipe when the cartridge is installed. Thus, it is an end cap positioned on a cartridge that is used by being loaded over a stand pipe, by an aperture the opposite end of the cartridge. This would be typical a "top load" cartridge, in a typical application, although it is not exclusive to such cartridges.

In part, the invention not only relates to the physical construction of the cartridge, to be installed and removed from a housing, but also to the diffusion pattern in the outside wall and end wall (and its the absence of the inner wall) of the treatment agent storage and release cartridge that allows for a preferred diffusion treatment agent into liquid, prior to filtering. In fact, the net effect of the diffusion pattern will be changing in rate of diffusion of treatment agent into liquid in use. This effect is described in detail in the present application at page 6, lines 4-33 and further at page 14, lines 26-page 18, line 29.

The effect, then, provides for advantageous diffusion of treatment agent into liquid with a lower diffusion rate of treatment agent occurring early in the product cycle and a higher rate occurring later in the product cycle. This is, in part, accomplished by having more aperture open area in the sidewall than in the end wall, when an assembly similar to claim 1 is used.

III. The Office Action

A. The Double Patenting Rejection

With respect to Applicants' Representatives' comment in the response of May 4, 2010 as to whether the Examiner states whether a "similar double patenting rejection" would be raised, the Examiner indicated some confusion. Applicants' Representatives will clarify here.

As to the May 4, 2010 submissions, Applicants' Representatives amended the claims after the previous double patenting rejection had been raised. Thus, it appeared to be reasonable to ask whether the double patenting rejection would be maintained. Since a terminal disclaimer was also being submitted along with the Office Action response of May 4, 2010, it was appropriate to ask the Examiner to indicate in the record whether the double patenting rejection was maintained, in spite of the amendments to the claims. Applicants' Representatives were not asserting that the double patenting rejection should not be retained, they simply wanted the record clear as to whether it was, in view of the amendments.

Since there is already a terminal disclaimer in this record to U.S. 7,160,451 and 7,238,285, and since the claims have been amended with the present response, it is again merely requested that the Examiner indicate in the record that but for the terminal disclaimer, the double patenting rejection would be reasserted. (Otherwise the terminal disclaimer can be withdrawn).

B. The Art Rejections

The primary art cited by the Examiner is Rohrbach et al. U.S. 6,623,636 in view of Paul et al. U.S. 4,075,098. It is noted that each of these patents was of record in the Patent Office examination of each of U.S. 7,160,451 and 7,238,285.

Since the present claims have received a double patenting rejection based upon two previous U.S. patents (U.S. 7,160,451 and 7,238,285) there appears to be some inconsistency on the part of the Patent Office. It is requested that this be considered.

In any event, it is believed that the current form of the claims distinguishes this art. This will be explained in further detail below.

It is noted that certain dependent claims were rejected under these previous references, and in view of additional references namely Hacker U.S. 6,322,697 or Neufeld U.S. 6,488,845. While these two references were not cited and considered during the prosecution of U.S. 7,160,451 and 7,238,285, it is believed they are cited merely for issues relating to selected features in dependent claims here, and do not necessitate a different result. This is discussed further herein below.

1. Rohrbach et al. U.S. 6,623,636

The present claims require, among other things, a service cartridge that is positioned in a housing in use. Rohrbach does not show a service cartridge that is positioned in a housing in use, rather Rohrbach is an overall service cartridge that is used in a spin-on system, and is not installed in a housing in use.

The current claims require a radially inwardly directed seal member positioned on the treatment agent storage and release cartridge oriented to seal to a housing standpipe when installed. The Rohrbach et al. arrangement does not operate in this manner.

The present claim 1 requires the treatment agent storage and release cartridge to have an end wall with a flow aperture arrangement therethrough, an outer sidewall with a flow aperture arrangement therethrough, and a total diffusion area in the flow aperture arrangement in the outer sidewall being greater than the total diffusion of the flow aperture in the end wall. This leads to the desired diffusion effect referenced above and discussed in the application, i.e. slower diffusion initially and faster diffusion later.

Rohrbach et al. does not have this flow arrangement or provide this effect. There is no flow aperture arrangement surrounding the treatment agent, or an outer sidewall. In fact, Rohrbach operates with a different flow pattern.

At least for the above reasons, it is apparent that the Rohrbach et al. reference is readily distinguished by the preset claims.

2. Paul et al. U.S. 4,075,098

This reference also concerns a spin-on arrangement, not a cartridge that is positioned in an assembly during use. It does not show a radially directed seal for engagement with a standpipe. It does not show the treatment agent storage and release cartridge having both the end wall with a flow aperture arrangement therethrough, and an outer wall with a flow aperture arrangement therethrough, with the total diffusion area on the outer wall being larger than in the end wall. Thus, it does not create the desirable flow pattern of Applicants' arrangement, referenced above.

With respect to the Paul et al. reference, the Examiner directed attention to a retaining plate in Paul et al., Figs. 8-10, and has stated that it would have been obvious to a person or ordinary skill in the art to replace the plural dispensing modules in Rohrbach with the additive ring of Paul.

It is noted that the Rohrbach et al. uses a flow pattern through the treatment agent storage and release region 316, by directing it through opposite end pieces. Thus, what the Examiner is suggesting is that it would have been obvious to change the flow pattern of Rohrbach et al., by introducing the alternate flow pattern of Paul et al. Even so, this would not lead to Applicants' arrangement, in which there needs to be flow apertures through the assembly at an end remote from the cartridge, as well as through the sidewall. This is the key flow pattern that provides the particular advantageous diffusion.

As to the larger surface area on the sidewall than the end wall, through which diffusion occurs, the Examiner states that these are "result effective variables" which would have been obvious to optimize.

The Examiner does not appear to have fully appreciated, however, that the variables with respect to a amount and location of these apertures are what lead to the desirable operation of Applicants' system. Initially, liquid flow does not primarily go through the storage and release cartridge in Applicants' system. Rather, it primarily goes around the treatment agent storage and release cartridge, until sufficient erosion has occurred for liquid to enter the apertures in the end piece and then flow outwardly through the

apertures in the side. At this point, the larger aperture area in the side, combined with flow along the side, will tend to draw the liquid into the end apertures and through the inside of the treatment agent storage and release cartridge.

Neither the Paul et al. nor the Rohrbach et al. reference arrangement provide for this effect. Replacement in Rohrbach et al. with the end piece of Paul, would also not provide for this effect. The effect is accomplished by having an end wall with apertures and a sidewall with apertures, in combination; the end wall with apertures being the end remote from the filter cartridge media.

It is noted that one of the reasons these features are not found and cannot be found in a combination of Paul and Rohrbach, is that each is a spin-on filter, and is not concerned with an assembly to be positioned in a housing, to provide the desired flow effects. Also, each is not configured for "top load" as the term is used in Applicants' specification. Thus, a combination of Paul et al. and Rohrbach et al. is readily avoided.

3. Hacker U.S. 6,322,697

Hacker et al. U.S. 6,322,697 was merely cited with respect to an end cap secured with an adhesive. It does not disclose a treatment agent storage and release cartridge at all, much less one with a diffusion pattern as defined herein.

4. Neufeld et al. U.S. 6,488,845

Neufeld et al. was merely cited by the Examiner with respect to "mounting prongs." Neufeld et al. does not show a treatment agent storage and release cartridge at all, much less one with features analogous to Applicants' and which accomplishes the desired diffusion pattern or effect.

IV. Conclusion

Claims 4-11 are pending. Each is believed to distinguish the art of record for the reasons stated. A terminal disclaimer has previously been submitted, with respect to Applicants' Assignee U.S. 7,160,451 and 7,238,285. A copy of the previous terminal disclaimer is provided herewith as Exhibit A.

It is believed that all claims are in condition for allowance and a notice to this effect is requested. The Examiner is invited to contact Applicants' Representative at the below listed telephone number, if it is believed that prosecution can be assisted thereby.

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PATENT TRADEMARK OFFICE

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